

electrically insulating substrate with the first electrode disposed on the fourth electrically insulating substrate;

84
3
a first electrically conductive end termination wrapping around a first end of the device and electrically contacting the first electrode disposed on the fourth electrically insulating substrate, the first electrode disposed on the third electrically insulating substrate, and the first electrode disposed on the second electrically insulating substrate; and

a second electrically conductive end termination wrapping around a second end of the device and electrically contacting the second electrode disposed on the third electrically insulating substrate, the second electrode disposed on the second electrically insulating substrate, and the first electrode disposed on the first electrically insulating substrate.

REMARKS

Applicants have canceled Claims 6, 9 and 17, amended Claims 1, 16 and 26, and added Claims 38-42. Claims 33-37 were previously withdrawn from consideration. Accordingly, Claims 1-5, 7-8, 10-16, 18-32 and 38-42 are now at issue.

Applicants' undersigned attorney appreciates the courtesies extended by Examiner Easthom during the telephonic interview on March 29, 2001. Accordingly, and as indicated above, Applicants have canceled Claims 6, 9 and 17, and amended Claims 1, 16 and 26. The amended Claims are believed to distinguish over the cited prior art and, therefore, are in condition for allowance. Additionally, Applicants have rewritten allowable Claim 30 as newly added independent Claim 38, allowable Claim 31 as newly added dependent Claim 39, allowable Claim 31 as newly added independent Claim 40, allowable Claim 30 as newly added dependent Claim 41, and allowable Claims 30 and 31 as newly added independent Claim 42.

Claims 1-29 and 32 stand rejected. Claims 30-31 are allowable. Independent Claims 1, 16 and 26 have been amended to patentably define over the prior art, as discussed with Examiner Easthom. Claims 2-5, 7-8 and 10-15 depend from, and further narrow, amended Claim 1. Claims 18-25 depend from, and further narrow, amended Claim 16. Claims 27-32 depend from,

and further narrow, amended Claim 26. Newly added Claims 38-42 patentably define over the prior art. As amended, Claims 1-5, 7-8, 10-16, 18-32 and 38-42 are submitted to place the application in condition for allowance.

In view of the above amendments and remarks, Applicants respectfully submit that this application is in condition for allowance and such action is respectfully requested.

The Examiner is invited to telephone the undersigned attorney, to expedite any further prosecution of this application. The Examiner is authorized to charge any deficiencies or credit any overpayments associated with this communication to our Deposit Account No. 23-0280.

Respectfully submitted,

Date: 04-19-01

By: Christopher S. Clancy

Christopher S. Clancy, Reg. No. 44,618
Wallenstein & Wagner, Ltd.
311 South Wacker Drive - 53rd Floor
Chicago, Illinois 60606-6630
312.554.3300
Attorney for Applicant

CERTIFICATE OF MAILING (37 C.F.R. § 1.8a)

I hereby certify that this correspondence is, on the date shown below, being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to: Box AF, Commissioner For Patents, Washington, D.C. 20231 on

April 19, 2001
Carol J. Wiechers
Carol J. Wiechers/178807.1



Attorney Docket No. 8040 P746
Application No. 09/510,116

118790.1

ATTACHMENT A

1. (Amended) A surface-mountable electrical circuit protection device comprising:

a first electrically insulative supporting substrate having a first end and a second end and [an] only one electrode disposed on a first surface thereof, the electrode disposed on the first surface of the first supporting substrate extends to one of the first or second end of the first substrate but not the other of the first or second end of the first substrate;

a second electrically insulative supporting substrate having a first end and a second end and [an] only one electrode disposed on a first surface thereof, the electrode disposed on the first surface of the second supporting substrate extends to one of the first or second end of the second substrate but not the other of the first or second end of the second substrate;

a PTC element having a first end and a second end and comprised of a polymer having conductive particles dispersed therein, the PTC element positioned between the first and second supporting substrates and electrically connected to the electrodes, the electrode disposed on the first surface of the first supporting substrate extends to one of the first or second end of the PTC element but not the other of the first or second end of the PTC element, the electrode disposed on the first surface of the second supporting substrate extends to one of the first or second end of the PTC element but not the other of the first or second end of the PTC element;

a first electrically conductive end termination wrapping around [a] the first end of the PTC element and electrically contacting the electrode disposed on the first substrate; and

a second electrically conductive end termination wrapping around [a] the second end of the PTC element and electrically contacting the electrode disposed on the second substrate.

16. (Amended) A surface-mountable electrical circuit protection device comprising:

a first electrically insulative substrate having [an] a first electrode disposed on a first surface thereof;

a second electrically insulative substrate having [an] a first end and a second end and a first electrode disposed on a first surface thereof and a second electrode disposed on a second surface thereof, the first electrode disposed on the first surface of the second substrate extends to one of the first or second end of the second substrate but not the other of the first or second end of the second substrate, the second electrode disposed on the second surface of the second substrate extends to ^{the opposite} one of the first or second end of the second substrate but not the other of the first or second end of the second substrate;

a third electrically insulative substrate having a first electrode disposed on a first surface thereof;

a first PTC element comprised of a polymer having conductive particles dispersed therein, the first PTC element interposed between the first and second substrates and electrically connecting the first electrode disposed on the first substrate with the first electrode disposed on the second substrate;

a second PTC element comprised of a polymer having conductive particles dispersed

therein, the second PTC element interposed between the second and third substrates and electrically connecting the second electrode disposed on the second substrate with the first electrode disposed on the third substrate;

*physically and electrically
and directly connecting with
one of the first or second electrodes on the first or second
surface of the second insulating substrate but not*
a first conductive end termination wrapping around a first end of the device; and
a second conductive end termination wrapping around a second end of the device.

26. (Amended) A surface-mountable electrical circuit protection device comprising:

the other
a first electrically insulating substrate having an electrode disposed on a first surface thereof;

a second electrically insulating substrate having a first end and a second end and a first electrode disposed on a first surface thereof and a second electrode disposed on a second surface thereof, the first electrode disposed on the first surface of the second substrate extends to one of the first or second end of the second substrate but not the other of the first or second end of the second substrate and the second electrode disposed on the second surface of the second substrate
the opposite
extends to one of the first or second end of the of the second substrate but not the other of the first or second end of the second substrate;

a third electrically insulating substrate having a first electrode disposed on a first surface thereof and a second electrode disposed on a second surface thereof;

a fourth electrically insulating substrate having a first electrode disposed on a first surface thereof;

a first laminar PTC element comprised of a polymer having conductive particles

dispersed therein, the first PTC element interposed between the first and second insulating substrates and electrically connecting the first electrode disposed on the first insulating substrate with the first electrode disposed on the second insulating substrate;

a second laminar PTC element comprised of a polymer having conductive particles dispersed therein, the second PTC element interposed between the second and third insulating substrates and electrically connecting the second electrode disposed on the second insulating substrate with the first electrode disposed on the third insulating substrate;

a third laminar PTC element comprised of a polymer having conductive particles dispersed therein, the third PTC element interposed between the third and fourth insulating substrates and electrically connecting the second electrode disposed on the third insulating substrate with the first electrode disposed on the fourth insulating substrate;

a first electrically conductive end termination wrapping around a first end of the device and electrically contacting the first electrode disposed on the fourth insulating substrate, the first electrode disposed on the third insulating substrate, and the first electrode disposed on the second substrate; and

a second electrically conductive end termination wrapping around a second end of the device and electrically contacting the second electrode disposed on the third insulating substrate, the second electrode disposed on the second insulating substrate, and the first electrode disposed on the first insulating substrate.